U. S. DEPARTMENT OF AGRICULTURE.

FARMERS' BULLETIN No. 197.

IMPORTATION OF GAME BIRDS AND EGGS FOR PROPAGATION.

BY

T. S. PALMER and HENRY OLDYS,
Assistants, Biological Survey.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1904.

LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF BIOLOGICAL SURVEY,
Washington, D. C., April 29, 1904.

SIR: I have the honor to transmit herewith for publication as a farmers' bulletin a report on the importation of game birds and eggs for propagation, prepared by Dr. T. S. Palmer, assistant in charge of game protection, and Henry Oldys, assistant. The object of this bulletin is to furnish information respecting the game birds brought into the United States since the passage of the Lacey Act of 1900, and the eggs of game birds imported under the Egg Act of 1902.

Respectfully.

C. HART MERRIAM,
Chief, Biological Survey.

Hon. JAMES WILSON,
Secretary of Agriculture.

CONTENTS.

	Page.
Introduction	5
Number of game birds imported	6
Countries from which game birds are imported	7
Destination of imported birds	9
Kinds of game birds imported	10
Pheasants	10
Partridges	13
Quail	14
Ducks and geese	14
Miscellaneous	14
Importation of eggs	15
Successful experiments abroad in introducing game birds	17
State experiments in introduction and propagation of game birds	18
Limitations on introduction of foreign game birds	21
Habits of the birds	21
Cost of birds	22
Protection	22
Summary	26

ILLUSTRATION.

FIG. 1. Map showing States which have laws protecting introduced birds..... 25

IMPORTATION OF GAME BIRDS AND EGGS FOR PROPAGATION.

INTRODUCTION.

Under the Act of May 25, 1900, commonly known as the Lacey Act, the Department of Agriculture was authorized to issue permits for the importation of foreign birds and required to collect and publish useful information concerning the protection and preservation of birds. By the Act of June 3, 1902, the prohibition of the entry of eggs, which had existed since August, 1894, was modified so that eggs of game birds for propagation could be imported under regulations prescribed by the Secretary of Agriculture.[a] Nearly four years have elapsed since the Lacey Act went into effect and nearly two years since the Egg Act became a law, and during this time considerable data have been accumulated regarding the importation of game birds and their eggs.

During the last twenty or thirty years large numbers of quail and pheasants have been brought to the United States for food and for stocking game coverts, parks, country seats, and farms. Interest in these birds has become widespread and has led to the establishment in this country of several large pheasantries to supply the demand for pheasants and other foreign game birds. In some sections where birds have been liberated they have become well established, and with proper protection should form a permanent addition to the game birds of the United States. The supervision of these imports has brought together a number of facts not heretofore available, and has enabled the Department to collect information that should be of interest and service to importers, sportsmen, farmers, and others.

Although game birds have been imported into the United States for many years, information is lacking as to the time of the first importation, either of birds or of eggs for propagation. The introduction of the English pheasant into the Eastern States, the attempts to acclimatize the migratory quail of Europe during the late seventies, and the successful introduction of the Mongolian pheasant into Oregon dur-

[a] See Biological Survey Circular No. 37, June 9, 1902.

ing the early eighties, all gave new impetus to the importation of foreign game. Prior to the passage of the Act of 1900 it was practically impossible to ascertain the number or kinds of game birds brought to the United States. The statistics of imports did not attempt to show the different kinds, and there was no means of identifying doubtful species at the ports of entry. Even under present conditions absolute accuracy is unattainable. Statistics based on permits alone are unsatisfactory because the number of birds mentioned in the permit may be greater than the number actually brought in, owing to several factors, chiefly casualties en route and occasional failures to use the permits issued; but by the inspection of the larger shipments at New York, where most of the birds are entered, and by the employment of several other checks, many of the discrepancies are removed. The cordial cooperation of the Treasury Department in carrying out the regulations through officers of the customs and in furnishing certain information gives an added check that insures an approximation to the exact figures which is sufficiently close for practical purposes.

It would be an advantage if importers would more frequently publish the results of their experiments and the causes of their success or failure. In comparison with the records of game introduction in some other countries, those of America are fragmentary and unsatisfactory. Many notes on the English and Mongolian pheasants may be found in some of the sportsmen's journals, but records of the introduction of the rarer species are not always published and are frequently difficult to find. The date of the first introduction of a foreign species is a matter of general interest, and the conditions under which the importation is made may be a guide to future experiments of the same kind.

In the following pages the importations made during the last three years and a half are briefly shown, and some of the questions relating to the introduction of game birds into the United States are discussed. But while the more important facts are presented, many details of interest which should be included are at present unobtainable.

NUMBER OF GAME BIRDS IMPORTED.

Since the passage of the Lacey Act, as shown by the issue of permits, 23,178 game birds have been brought into the United States as follows: 6,584 in the fiscal year 1901; 5,281 in 1902; 9,126 in 1903, and 2,187 in the first six months of the fiscal year 1904. Of the total number, 3,866 were pheasants, 16,609 quail, 753 partridges, 1,473 ducks and geese, and 477 miscellaneous birds. The importation of pheasants shows a regular increase each year, but that of other birds is more or less irregular. While pheasants constitute a little less than 17 per cent of the total imports, it should be noted that most of them are English, ring-necked, and golden pheasants, species which

are now bred in considerable numbers in various parts of the United States; the importations from abroad may therefore be regarded as supplementing native-bred birds, which are raised chiefly in New York, New Jersey, Illinois, and Oregon. The number of imported pheasants seems large in comparison with the original importations of ring-necked pheasants in Oregon—15 in 1881, and 35 in 1882—but the total number brought into the United States during the last four years is actually small in comparison with the numbers raised each year in some places in Europe. Thus Newton states that 101,000 pheasants' eggs were sold and 9,700 pheasants were killed in 1893 on one estate in Suffolk, England.[a] It is moderate, also, in contrast with the number of pheasants raised on some of the private game preserves in the eastern part of the United States. Thus, according to the Fish and Game Commission of New Jersey, as many as 10,000 to 20,000 pheasants have been reared in a season on the game preserves in that State;[b] and during the past year on a single estate in Massachusetts more than 1,500 pheasants' eggs were gathered and over 1,000 chicks were hatched (see p. 16).

The number of birds annually imported into the United States since 1900 is shown in the following table:

Table showing importations of game birds during the fiscal years ending June 30, 1901–4.[c]

Fiscal year.	Pheasants.	Quail.	Partridges.	Ducks and geese.	Miscellaneous.	Total.
1901	727	4,786	535	376	160	6,584
1902	1,302	3,029	142	718	90	5,281
1903	1,506	7,040	76	359	145	9,126
1904	331	1,754	.....	20	82	2,187
Total	3,866	16,609	753	1,473	477	23,178

[c] Under 1901 are included 17 pheasants and 60 quail imported in June, 1900. The entries for 1904 include only the six months ending December 31, 1903.

COUNTRIES FROM WHICH GAME BIRDS ARE IMPORTED.

As a rule foreign game birds are imported only from Canada, Belgium, England, Germany, China, and Japan. Importations from Canada range from 300 to 600 birds per annum, the total number since June, 1900, being nearly 2,000. Three-fourths of these were pheasants from a dozen or more localities in southern Ontario, chiefly London, Hamilton, Kingsville, Wiarton, and Thamesville, where the birds are bred in some numbers. Shipments are received mainly through the ports of Detroit, Buffalo, and Niagara Falls. This trade seems to be steadily increasing.

[a] Dictionary of Birds, p. 714. [b] Annual Report for 1903, p. 17.

Belgium stands next to Canada in the number of game birds sent to the United States, the shipments averaging about the same from both countries, although those of Belgium show a much larger number of species. As with Canada the importations are mainly pheasants, the two countries together furnishing three-fourths of the pheasants imported by the United States, but nearly all the rarer species come from Belgium. Various kinds of waterfowl are also imported in some numbers. All but a few of the numerous Belgian shipments are from Antwerp.

Comparatively few birds are brought from England. The annual importations vary from 100 to 300 and the total number reported for the period 1900–1904 is less than 700. These consignments come chiefly from Liverpool and London and consist mainly of pheasants, but include occasionally a few partridges and waterfowl.

Although Germany leads all other countries in the number of cage birds shipped to the United States, it stands fourth in the number of game birds. The usual importations average less than 300 per annum, and the total number for four years is about 1,300. These birds arrive generally in large miscellaneous shipments of cage birds from Bremen and Hamburg. They comprise chiefly partridges and waterfowl, with comparatively few pheasants and quail. More partridges are brought from Germany than from any other country. They are mostly the gray partridge, the common species of Europe.

China leads the rest of the world in the number of game birds exported to the United States. The shipments range from about 3,000 to 7,000 birds per year, and the total number from 1900 to 1904 amounts to nearly 17,000. These large shipments are made up almost entirely of Chinese quail forwarded from Hongkong to San Francisco for restaurant purposes. Apart from quail the importations number about 500, chiefly pheasants and a few waterfowl.

Japan furnishes chiefly mandarin ducks and Japanese pheasants, which are shipped from Yokohama. The exact number of Japanese importations is difficult to ascertain owing to the fact that applications for permits to import game birds from the Orient do not often specify whether the birds come from China or Japan; but in any event the number is small compared with those received from other countries. It is probable that most of the pheasants imported into Hawaii come from Yokohama.

Importations are occasionally made from other countries, but they are comparatively unimportant and average less than 100 game birds per annum. Among these may be mentioned guans and curassows from Mexico, curassows from Brazil, capercailzie from Sweden, occasional pheasants and partridges from India, and swans from Australia.

The number of birds imported from each country is shown in the following table:

Table showing countries from which game birds were shipped during the fiscal years ending June 30, 1901–1904.[a]

Country and date.	Pheasants.	Quail.	Partridges.	Ducks and geese.	Miscellaneous.	Total.
Canada 1901	285	.....	.....	2	4	291
1902	433	.....	.....	514	.....	947
1903	555	.....	.....	8	.....	563
1904	189	.....	.....	.....	.....	189
Total.....	1,462	.....	.....	524	4	1,990
Belgium 1901	192	.....	.....	160	4	356
1902	534	.....	3	148	.....	685
1903	611	56	.....	201	59	927
1904	68	20	.....	2	5	95
Total.....	1,405	76	3	511	68	2,063
England 1901	81	.....	.....	24	2	107
1902	189	20	79	.....	.....	288
1903	154	.....	72	27	24	277
1904	6	.....	.....	.....	.....	6
Total.....	430	20	151	51	26	678
Germany 1901	.....	.....	535	160	91	786
1902	36	64	60	36	70	286
1903	24	10	4	70	31	139
1904	47	34	.....	.....	4	85
Total.....	107	128	599	266	196	1,296
China and Japan 1901	152	4,780	.....	30	48	5,010
1902	97	2,900	.....	.....	.....	2,997
1903	148	6,951	.....	2	.....	7,101
1904	19	1,700	.....	12	.....	1,731
Total.....	416	16,331	.....	44	48	16,839
Other countries..... 1901	17	6	.....	.....	11	34
1902	13	25	.....	20	20	78
1903	14	23	.....	51	31	119
1904	2	.....	.....	6	73	81
Total.....	46	54	.....	77	135	312
Grand total	3,866	16,609	753	1,473	477	23,178

[a] Under 1901 are included 17 pheasants and 60 quail imported in June, 1900. The entries for 1904 include only the six months ending December 31, 1903.

DESTINATION OF IMPORTED BIRDS.

A question which naturally suggests itself is: "What becomes of the large number of live birds annually imported?" Of the 23,000 brought in during the period covered by this report two-thirds, or over 16,600, were Chinese quail, probably few of which ever left San Francisco. Nearly a third of the 7,000 other birds were brought in for sale by wholesale dealers or by pheasantries, and their ultimate destination is unknown.

Many of the game birds imported are secured for exhibition in zoological gardens or at expositions, and the sportsmen's shows held during the past few years in Boston, New York, and Chicago have been the means of stimulating the importation of a number of the rarer species of pheasants and waterfowl. Partridges have been

imported mainly for liberation in different States. Three consignments went to Oregon, one to Mississippi, and one to North Carolina. Imported waterfowl are usually kept in captivity in parks or on private grounds and consequently are distributed in comparatively small numbers.

Probably three-fourths of all the pheasants that enter the United States are consigned to points east of the Mississippi River and north of Tennessee and North Carolina. Of those whose destination is shown by the permits, more than 2,000, or over two-thirds of the total number, went to six States—Massachusetts, Michigan, New Jersey, New York, Pennsylvania, and Ohio, which contain most of the pheasantries and large private collections of the United States. Only about 500 were consigned to points west of the Mississippi or in the South, and these were largely confined to four States—California, Missouri, North Carolina, and Texas.

English and Mongolian pheasants are usually secured for liberation. More than one-third went to New York, while Pennsylvania, Ohio, and New Jersey rank next in point of numbers received. Twenty-five per cent of the golden pheasants, which are generally kept in aviaries, also went to New York. Aviary pheasants are usually imported in small consignments. Thus, out of 85 shipments of golden pheasants, only 5 contained as many as 10 birds.

In addition to the distribution here shown many shipments of native-bred pheasants, of which the Department has no record, are made to various parts of the United States by American pheasantries.

KINDS OF GAME BIRDS IMPORTED.

Reference to the table on page 7 will show that imported game birds belong to comparatively few groups, which may be described in general terms as pheasants, quail, partridges, waterfowl, and miscellaneous birds.

PHEASANTS.

Omitting the peafowl, which may be entered without a permit, and the guinea fowl, which are placed by some authors in a separate family, both of which are here included under miscellaneous birds, the pheasants proper that have been imported comprise about 22 species belonging to 10 genera. From the standpoint of the pheasant breeder, these birds form two groups, (1) those for game preserves, and (2) those for aviaries. Birds intended for liberation are chiefly the hardy English pheasant from Europe (*Phasianus colchicus*) and the Mongolian pheasant[a] (*Phasianus torquatus*) from China, though a few golden,

[a] The term Mongolian is here applied to the ring-necked pheasant, known also as the "Denny," "Chinese," or "torquatus" pheasant (*P. torquatus*); the true Mongolian pheasant (*P. mongolicus*) has seldom, if ever, been brought to the United States.

silver, and Japanese pheasants have been turned out in some localities, and the Prince of Wales, Reeves, and Sœmmerring pheasants are also recommended for coverts by Tegetmeier.[a] Unfortunately exact statistics of the number of each species brought in are not available and applications for permits in many cases fail to show the kind of pheasants for which entry is desired. Of those which were designated by species, 646 were English and 361 Mongolian, or a total of 907 birds belonging to these two species—more than 50 per cent of those specifically known. Probably most of the miscellaneous pheasants are also English and Mongolian, so that it is safe to assume that these species constitute fully two-thirds of the importations.

The aviary pheasants comprise about 20 species,[b] several of them of striking and beautiful plumage, but for the most part suitable only for exhibition or propagation in captivity. These species are as follows:

LIST OF SPECIES OF AVIARY PHEASANTS IMPORTED INTO THE UNITED STATES.

Name.	Habitat.
Horned tragopan (*Tragopan satyra*)	Himalayas.
Temminck tragopan (*Tragopan temminckii*)	Southwestern China.
Cabot tragopan (*Tragopan caboti*)	Southeastern China.
Impeyan pheasant or monaul (*Lophophorus impeyanus*)	Himalayas.
Siamese pheasant (*Diardigallus diardi?*)	Siam and Cochin China.
Crossoptilon or Manchurian pheasant (*Crossoptilon mantchuricum*)	Manchuria.
Melanotte or black-backed kaleege (*Gennæus*[c] *melanonotus*)	Eastern Himalayas.
Reynaud pheasant or lineated kaleege (*Gennæus lineatus?*)	Pegu and Tenasserim.
Silver pheasant (*Gennæus nycthemerus*)	Southern China.
Swinhoe pheasant (*Gennæus swinhoii*)	Formosa.
Japanese pheasant (*Phasianus versicolor*)	Japan.
Sœmmerring pheasant (*Phasianus sœmmerringii*)	Japan.
Reeves pheasant (*Phasianus reevesii*)	China.
Elliot pheasant (*Calophasis ellioti*)	Southeastern China.
Golden pheasant (*Chrysolophus*[d] *pictus*)	Southern China.
Lady Amherst pheasant (*Chrysolophus amherstiæ*)	Western China.
Jungle-fowl (*Gallus gallus*)	India, Malay Peninsula.
Sonnerat jungle fowl (*Gallus sonnerati*)	Southern India.
Fork-tailed jungle fowl (*Gallus varius*)	Sunda Islands.
Peacock pheasant (*Polyplectron* sp.?)	India, Malay Peninsula.

[a] Pheasants: Their Natural History and Practical Management, 3d ed., 1897.

[b] In addition to the species here named six others are said to be represented in the Davenport collection at Morris Plains, N. J. These species are the Bornean Fireback (*Lophura nobilis*), the Hoki (*Crossoptilon tibetanum?*), Anderson's kaleege (*Gennæus andersoni*), Cheer pheasant (*Phasianus wallichii*), Formosa pheasant (*P. formosanus?*), and Argus pheasant (*Argusianus argus*).

[c] *Euplocomus*, the name commonly used for this genus, was previously used in entomology, and is consequently not available for a pheasant.

[d] *Thaumalea*, the name commonly used for this genus, was previously used in entomology, and is consequently not available for a pheasant.

Some of these are imported in considerable numbers and may be regarded as rather common, while others are rarely brought in and are to be seen only in some of the zoological gardens or in especially rich private collections. Of the 1,700 or more pheasants the species of which are known,[a] about 400 were golden, 100 silver, 100 Amherst, 45 Reeves, 35 Japanese, 25 Swinhoe, 25 Elliot, 14 Sœmmerring, 9 impeyan, 12 tragopan (including 4 horned, 2 Cabot, 2 Temminck, and 4 entered simply as "tragopan"), 2 melanotte, 2 Siamese, 11 jungle fowl, and a few each of several others. The tragopan, melanotte, and Siamese pheasants are rare and of more than ordinary interest. At least three consignments of tragopans have been imported; one in January, 1901, containing one pair of each of the three species; one in January, 1903, containing two horned tragopans, and one in March, 1903, containing two pairs of tragopans. The melanotte and Reynaud pheasants arrived in February, 1902, and the Siamese in June, 1903. All these birds, and in fact nearly all the rarer pheasants, came from Antwerp.

It is worthy of note also that many of these species are natives of China; no less than eight species come from that country. Japan is the home of the Sœmmerring and Japanese pheasants; Formosa, of the Swinhoe; Siam, of the Siamese; Pegu, of the Reynaud; the Himalayas, of the horned tragopan, impeyan, and melanotte; India, of two of the jungle fowl; and Manchuria, of the crossoptilon.

As an illustration of the expense and difficulty attending the introduction of some of these rarer aviary birds it may be mentioned that Jamrach, the well-known London importer, states that in 1864 he left India with 20 impeyans and tragopans, of which only 7 survived. In 1867 he shipped 300 and in 1868, 285, all of which died. In 1869 he shipped 100, 40 of which survived, the last shipment being forwarded by the Suez Canal, the earlier ones by the overland route. Elliott's pheasant, first made known to science by Swinhoe from specimens collected in Chekiang, southeastern China, in 1872, was introduced into England seven years later, and is now frequently imported into the United States. Concerning the introduction of these and other rare species into England, Jamrach says:

> In 1879 I first introduced *Calophasis elliotii*, and sold the pair for 3,000 francs, and for five years pursued with ardour their introduction, at a cost of 10,000 francs. The difficulties were almost insurmountable, but were at last overcome, and there are now a few pairs in England. The importation of these rare birds is not so profitable as it appears, for I have lost, during the nineteen years I have been engaged in these transactions, no less than £3,000, or 75,000 francs. (Horne, Pheasant Keeping for Amateurs, p. 76.)

[a] Many birds received in shipments from the gardens of the Royal Zoological Society at Antwerp, Belgium, were listed merely as "pheasants." Among these were doubtless examples of the rarer species mentioned above.

Reference may also be made to a very promising species, the Prince of Wales pheasant (*Phasianus principalis*), which has recently been successfully introduced into England, but which has not yet been imported into the United States. This species was first described in 1885 from specimens collected in northwestern Afghanistan, and live birds were presented to the Zoological Society of London in 1888, but arrived in poor condition and died without breeding. In February, 1903, Col. Marsden Sunderland succeeded in obtaining several birds, which were liberated in Hampshire and Surrey, England. During the past summer they bred successfully, and it is said that the young birds proved as easy to rear as those of the ordinary pheasant.[a]

PARTRIDGES.

Permits have been issued for the entry of about 750 partridges, the great majority of which (500 or 600) were the common gray partridge of Europe (*Perdix perdix*). The records also show at least one shipment of French or red-legged partridges (*Caccabis rufa*), comprising 39 birds, and entries were made of 20 "European partridges," 40 "German partridges," and 93 "partridges" without designation of species. Although the partridge has been frequently brought to the United States, it does not yet seem to have obtained a firm foothold. This is shown by two recent experiments, one in the Willamette Valley, Oregon, where the ring-necked pheasant was introduced with such good results, and the other near Corinth, Miss. In December, 1900, a permit was issued for the entry of 300 partridges for Oregon. The birds encountered a rough sea voyage of sixteen days, and having been shipped in crates lined with burlap, which became torn, many of them were entangled and died on the way, and only 97 were actually liberated. These were divided into four lots and were turned out at different points in the valley. They hatched successfully the first season and continued to multiply, bevies of as many as 40 or 50 being seen at some places. Near Albany, however, where they seemed to be doing best, they are said to have been nearly exterminated by pot hunters during the past open season.[b]

In February, 1901, 50 pairs of gray partridges from Hungary were shipped from London to Corinth, Miss., but owing to long confinement prior to shipment and the cold, rough voyage many of the birds died en route. Forty-two birds reached Corinth and 31 were liberated on March 20 in a place apparently favorable, but at a season when food was scarce. These conditions, coupled with the work of pot hunters, almost exterminated them.[c]

---

[a] Tegetmeier, London Field, vol. 103, p. 49, Jan. 9, 1904.
[b] Am. Field, Vol. LXI, p. 320, April 2, 1904.
[c] Am. Field, Vol. LXI, p. 368, April 16, 1904.

QUAIL.

Two-thirds of all the foreign game birds imported are quail, chiefly Chinese quail (*Coturnix japonica*), and the migratory quail of Europe (*C. coturnix*). This large proportion is explained by the great number of Chinese quail imported each year from Hongkong for restaurant purposes at San Francisco. These arrive chiefly between November and March, when 500 or more are brought over on each steamer. In the fiscal year 1901, 4,780 were imported; in 1902, 2,900; in 1903, 6,951, and in the six months ending December 31, 1903, 1,700, making 16,331 of a total number of 16,609 quail. It will be noticed that this trade increased largely in 1903, about which time a small trade was started at Honolulu, where 550 birds not included in the above totals were imported in November, 1902, and January, 1903. In 1901 California made killing or possession of Chinese quail a misdemeanor (Penal Code, section 626c), and recently the Board of Fish Commissioners has taken steps to enforce this provision of the game law, as the sale of these birds for restaurant purposes in close season is not only contrary to law but is likely to be used as a cloak for the sale of other quail out of season. Some attempts have been made to acclimatize the Chinese quail in California, but thus far without success, and the outlook is not encouraging, as the species is migratory.

The other quail imported are chiefly the common migratory quail of Europe, but two or three small consignments of hemipodes or small African quail of the genus *Turnix* were brought in at New York in 1901 and 1902 for exhibition purposes.

DUCKS AND GEESE.

Most of the waterfowl imported are practically domesticated or semidomesticated birds which are intended chiefly for exhibition in parks, zoological gardens, or private grounds. This is particularly so in the case of the mandarin duck and the wood duck. The total number of ducks and geese was 1,473, in which were included 600 geese, 400 "ducks" (species not stated), 275 mandarins, 75 teal, 36 wood ducks, and a few each of pintails, widgeons, gadwalls, shovelers, pochards, tree ducks, sheldrakes, and brant. Most of the geese came from Prince Edward Island, and a large proportion of the miscellaneous ducks from Antwerp. Some of the mandarin ducks came direct from China, and others from Antwerp. It is interesting to note that the wood duck, although a native species, figured in the importations to a greater extent than any other duck except teal and mandarins, most of the birds coming from Antwerp, where they are raised for the trade.

MISCELLANEOUS.

Chief among the miscellaneous birds are about 230 swans imported for exhibition in parks and zoological gardens. By a regulation of the Secretary of Agriculture dated September 13, 1900, permits are

not required for the entry of swans, and no complete record is kept by this Department of the number imported. Although most of those brought in seem to be the white swan of Europe (*Cygnus olor*), the black swan of Australia (*Chenopis atrata*) is also imported in some numbers, and at least 2 black-necked swans (*Cygnus melancoryphus*) from South America appeared in the importations. The black swan is now commonly bred in zoological gardens, and a number of the birds imported into the United States come from Antwerp. At the Golden Gate Park in San Francisco, 5 pairs successfully bred in June, 1903. This remarkable bird was discovered on January 6, 1697, at the mouth of Swan River in Western Australia, and the first account of it was communicated to the Royal Society of London in the following year. Apparently the first live birds seen in England were a pair presented to Queen Charlotte in 1801.[a] At the present time the species is said to be more abundant in foreign lands than in its native country.

Of the other miscellaneous birds, less than 250 in number, a few are of special interest, namely, 10 black game (*Lyrurus tetrix*) and 65 capercailzie (*Tetrao urogallus*). The black game were imported in December, 1901, by the Massachusetts Sportsmen's Association, for exhibition. The capercailzie were obtained from Sweden. Fifty-seven were imported for the Ontario Game Commission and 8 for a private club. The former were liberated in the Algonquin National Park, southern Canada, most of them in November, 1903, the remaining five or six later. A number of them have since been seen from time to time feeding upon conifers and birches. Previous experiments in attempting to acclimatize capercailzie in Maine, New Hampshire, and Vermont resulted unsuccessfully, and the outcome of the present experiment will therefore be watched with interest.

IMPORTATION OF EGGS.

From August, 1894, until June, 1902, the importation of eggs of game birds, whether for propagation or not, except specimens for scientific purposes, was prohibited by a clause in the Tariff Act (Act of 1894, section 471; Act of 1897, section 549). But under the Act of June 3, 1902, it became possible once more to import eggs of game birds for propagation, and since the passage of the law permits have been issued for six consignments, including 100 eggs of partridges and over 2,000 eggs of pheasants. These importations were as follows:

Importations of eggs under Act of June 3, 1902.

Permit No.	Date of entry.	Destination.	Kind.	Number.
471.....	June 26, 1902	Bay City, Mich.....	Pheasants.....	13
814.....	Apr. 29, 1903	Virginia.....	Partridges.....	100
818.....	May 8, 1903	Shelburne, Vt.....	Pheasants.....	1,500
821.....	May 12, 1903	Worcester, Mass.....	.....do.....	400
838.....	June 8, 1903	Long Island, N. Y.....	.....do.....	100
864.....	July 11, 1903	Lenox, Mass.....	.....do.....	1 box.

[a] Scherren, London Field, vol. 103, p. 542, March 26, 1904.

So far as shown by the records all these eggs were imported from England. The partridge eggs in entry 814 and the pheasant eggs in entry 864 failed to hatch. In the consignment for Long Island only 3 out of the 100 hatched and the chicks lived but a short time. Of the 400 consigned to Worcester, Mass., no separate record was kept, the eggs being set with 1,200 or 1,400 gathered from the pheasantry, and of the total number over 1,000 chicks were hatched. Of this experiment the importer writes:

> The eggs came in excellent condition, only one or two of the importation being broken. I do not think any were tested for fertility. Of the 400, 200 were set under hens by my keeper a Scotchman of long experience. The other 200 went to a game club of which I am a member. I have no accurate account of the number of eggs hatched. We gathered from our own pheasants something over 1,500 eggs, and from 1,200 to 1,400 were set by us. My belief is that we hatched in all (including the English eggs) over 1,000 chicks and they were all strong, healthy, and thriving, with small losses until the prolonged, almost continuous rains for three weeks beginning the first of June cut down the chicks by scores, until we estimate that we have only 300 to 400 left now almost fully matured [October, 1903].
>
> The club had about the same results. Another Scotchman had charge there. He had 200 of the English eggs and 250 or more from me, with about the same percentage of hatch and losses from weather.

A former experiment by this importer resulted in the hatching of 70 per cent of a consignment of 200 eggs.

The results of the largest importation, 1,500 eggs, and of the small consignment of 13 eggs, are unknown. While the first season's experiments were generally unsuccessful, they should not necessarily discourage future attempts in this direction. The eggs do not seem to have been tested for fertility, and the season as a whole was an unfavorable one for young birds. The fact that some birds were hatched in two of the consignments gives promise of success in introducing game birds by importing their eggs. In this connection it may be mentioned that the acclimatization of the red-legged partridge in England was accomplished in this way. According to Saunders:

> The red-legged partridge was successfully acclimatized in England about 1770, when large numbers of eggs were hatched under domestic fowls on two estates in Suffolk; and as the result of this and subsequent introductions it is now thoroughly established, not only in the above county, but also in Norfolk, Lincolnshire, Cambridgeshire, Essex, and some of the Midlands, and on dry ground along the northern side of the Thames Valley.[a]

Saunders also states that the eggs of the Barbary partridge (*Caccabis petrosa*) have occasionally been hatched in England, but the birds have never secured a foothold.

When more accurate data are available concerning the experiments, the causes of failure will doubtless be determined, and, with this knowledge and more careful attention to details of packing, shipping, and hatching, better success may be expected.

---

[a] Manual of British Birds, p. 489, 1889.

SUCCESSFUL EXPERIMENTS ABROAD IN INTRODUCING GAME BIRDS.

Successful acclimatization of game birds, by which is to be understood introduction of species into new regions where they find conditions suitable for increase in a state of nature, is restricted within narrow bounds. Many notable examples are on record, some of which are of special interest. Among pheasants, the so-called English pheasant (*Phasianus colchicus*) is said to have been carried to Europe by the Argonauts and to England by the Romans; it was certainly introduced into Britain before the Norman conquest. Within the last forty years it has been introduced into the eastern section of the United States and into New Zealand. The Mongolian or ring-necked pheasant (*Phasianus torquatus*) was successfully introduced into the island of St. Helena by the Portuguese as early as 1513.[a] It was acclimatized in England about the end of the eighteenth century, in New Zealand about 1850, later in the island of Ascension and in Hawaii (Maui, Oahu, Kauai), and finally in the United States about 1881. The Japanese pheasant (*Phasianus versicolor*) has been introduced into Oahu and Oregon, and the jungle fowl (*Gallus gallus*) into the island of St. Helena. The guinea fowl (*Numida meleagris*), well known as a domesticated bird, seems to have been introduced at an early date into the Cape Verde Islands, and also on Ascension and some of the Greater Antilles, where it has run wild.[b]

Examples of acclimatization of grouse and partridges are comparatively few in number. Notable among successful experiments were the introduction of the red grouse (*Lagopus scoticus*) into the Shetland Islands in 1858–1883, and southern Sweden about 1870, and the reestablishment of the capercailzie (*Tetrao urogallus*) in Scotland about 1838. The partridge (*Perdix perdix*) has been introduced into the outer Hebrides and Orkneys,[c] and the jungle fowl and the chukar partridge (*Caccabis chukar*) were introduced into the island of St. Helena, the latter in the early part of the sixteenth century—before 1588 and probably about the same time as the ring-necked pheasant. The red-legged or French partridge (*Caccabis rufa*) was introduced into England about 1770. At least two species of francolins have been carried to islands in the Indian Ocean, the Chinese francolin (*Francolinus chinensis*) to Mauritius and Reunion, and the gray francolin (*F. pondicerianus*) to Rodriguez and the Amirante Islands.

Several species of quail have been the subjects of more or less successful experiments. The California quail (*Lophortyx californicus*) has been introduced into Hawaii, Australia, and New Zealand, and

[a] Forest and Stream, Vol. LVII, p. 421, Nov. 30, 1901.
[b] Newton, Dict. Birds, p. 400, 1893.
[c] Evans, Birds, 1900.

this and one or two other species of American quail have been established in the western part of the United States and British Columbia in localities where they did not previously exist. The bobwhite was introduced into the Bermudas prior to 1840, but between that year and 1859 became extinct on the island. It was afterwards reintroduced from the United States, and has since maintained itself, although it has not become abundant.[a] The Asiatic quail (*Perdicula argoondah*) of India was introduced into Mauritius more than forty years ago. A few instances of naturalization of pigeons and doves are on record, among them that of the rock dove of Europe (*Columba livia*) in the island of St. Helena; that of the barred dove of the Malay Peninsula (*Geopelia striata*) in the Seychelles, Mauritius, Reunion, Round Island, and St. Helena;[b] and that of the Chinese dove (*Turtur chinensis*) in Hawaii.

As a rule greater success seems to have attended acclimatization of game birds of the Old World than of those of the New, and better results have been secured with pheasants than with any others. Comparatively little success has been attained in attempts to introduce the bobwhite and other American game birds (except possibly the California quail) into Europe, though several of the species succeed well in captivity.

In the case of migratory birds little or no success has been achieved, and in the effort to introduce the migratory quail of Europe into the United States much money and effort have been expended to no purpose, as the birds have disappeared in every case within a year or two after liberation. About 1877 repeated efforts were made to introduce this species. In June of that year 197 quail were liberated in Vermont in the vicinity of Rutland, and 189 in Massachusetts;[c] but the experiments, though promising at first, finally resulted in the loss of all the birds.

STATE EXPERIMENTS IN INTRODUCTION AND PROPAGATION OF GAME BIRDS.

Foreign game birds have been imported by individuals and associations in many parts of the country. Mongolian pheasants were introduced on the northwest coast twenty-three years ago through the efforts of the late Judge O. N. Denny, formerly consul-general at Shanghai, and they have now become permanently established at a

[a] Bangs and Bradlee, Auk, Vol. XVIII, p. 250, 1901.

[b] Salvadori, Cat. Birds British Museum, Vol. XXI, pp. 460–461, 1893. The ground dove of New South Wales (*Geopelia tranquilla*) has also been reported from the island (Meliss, Ibis, 1870, pp. 97–107).

[c] Forest and Stream, Vol. XIII, pp. 12, 345, 1877.

number of places in Oregon, Washington, and British Columbia. In referring to the increase of pheasants in Oregon Judge Denny states:[a]

> The game warden, Mr. M'Guire, estimates the number killed last season [1893] in three months, in Linn County alone, at 13,000; and that a year ago last winter, when the sleet and snow were on, 1,200 dozen of these birds were sent to one dealer in San Francisco.

The success in Oregon stimulated similar experiments in other States, but the results attained have as a rule been less satisfactory, owing, probably, to less favorable natural conditions. Work of this kind has been undertaken under State auspices in comparatively few sections of the United States and Canada, notably in California, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Vermont, and Ontario. In most cases the experiments have been limited to liberating pheasants, chiefly the Mongolian or ring-necked, but some attention has been paid to capercailzie in Vermont and Ontario, and to black grouse in Vermont and Maine.

A few of these experiments are now in progress. In Delaware the Game Protective Association, which is in charge of the warden service of the State, distributed 28 pairs of Chinese pheasants in 1903 and about 60 pairs in 1904. The reports of the progress of this work are encouraging and give promise of success. In 1893 the Game and Inland Fishery Protection Society of Nova Scotia, which acts as a game commission of the Province, imported 18 pheasants, which were liberated in suitable localities. Apparently pheasants have not increased to any great extent in Nova Scotia, and the question whether they will ever become firmly established is still in doubt. Reference has already been made to the recent introduction of capercailzie from Sweden by the Ontario Game Commission (see p. 15). The expense of this experiment was about $1,400. The birds were apparently liberated under more favorable conditions than those in Vermont and Maine, and the present outlook for the experiment is very promising.

Propagation for distribution has also been tried in a few States, but at present is being carried on only in Massachusetts. About 1898 New Jersey attempted to raise and distribute pheasants, but soon discontinued the work, and in recent years has confined its efforts chiefly to securing native quail for distribution.

Ohio systematically raised Mongolian pheasants for several years, and in 1900 expended $4,000; in 1901, $3,000; and in 1902, $2,000. In 1900 about 7,075 eggs were collected from 161 female pheasants. Of these 2,575 were distributed throughout the State and 4,500 were set at the hatchery at London. Of the latter, 3,181 eggs hatched and 2,239 birds were distributed, the smallest number sent to any one county being 14, the largest 77. In 1901 about 9,041 eggs were col-

[a] Rept. Mass. Comm. Fish and Game for 1894, p. 19.

lected from 228 female pheasants. Of these 4,000 were distributed and 5,000 were set at the pheasantry. Of the whole number 3,420 eggs hatched; 1,680 birds were distributed, and 2,852 were reared and placed in parks. It will be noticed that in 1900, 71 per cent of the eggs hatched, and in 1901, 68 per cent. In the summer of 1902 the experiment was discontinued because of the failure of the general assembly to make an appropriation sufficient to carry on the work. The commission reported:

> The impression was prevalent that pheasant raising could never attain satisfactory results in Ohio, owing to climatic conditions and to various other causes detrimental to pheasant life. There is a division of opinion on this question, but the burden of evidence seems to be in support of the conclusion that the State should discontinue the work. The rearing of the birds involved large expense, and, despite the utmost care, disease was liable to sweep away a great portion of the hatch. * * * At some time in the future it seems desirable to attempt the propagation of quail, using for this work the general paraphernalia of the pheasantry. (Rept., 1902, pp. 6, 7.)

New York undertook the propagation of pheasants for distribution in 1896, and continued the experiment for eight years. The original stock of 12 birds increased by 1897 to 180 and in 1900 distribution was begun. From 1900 to 1904, the total number of pheasants distributed was 1,064. The work was then brought to a close as explained in the following statement issued in April, 1904:

> It is officially announced by the Forest, Fish and Game Commission that no more pheasants will be bred for free distribution by the State. The annual distribution made on February 1, as usual, covered all the birds on hand in the pens at the Pleasant Valley Hatchery which were sent out to 57 different localities.
>
> The Commission states that, while the experiment with the pheasants has been a success and has led many fish and game clubs throughout the State to breed and distribute the birds, it is no longer desirable for the Department to continue the work, both on account of the readiness with which pheasants may now be procured from commercial hatcheries, and of the fact that no funds are now properly available for the necessary expense which it entails.
>
> The order to breed pheasants at the Pleasant Valley Hatchery in Steuben County, was given in 1896, and about 40 birds were raised there the next year. These were not released until the year following when the stock had increased to 180 birds. In 1899 the first and only appropriation made for the work was secured, amounting to $1,000, which was chiefly used in constructing the necessary pens. That year over 400 pheasants were successfully reared. In 1900 the number of birds distributed was 216, in 1901 it was 199, in 1902 it was 225, in 1903 it was 208, and in 1904 it was 216. During the year which closed on February 1, the Commission received applications which, if they could all have been filled, would have required 238 pairs of pheasants. When the legislature declined to make a further appropriation, the Commission apportioned the birds on hand among the applicants, and instructed the hatchery foreman to dismantle the pens.

Massachusetts began experiments with pheasants in 1894 with an appropriation of $150. This was followed in 1895 by an appropriation of $400. In the latter year an act was passed giving complete

protection to English, Mongolian, and golden pheasants for five years, and the law has since been extended to 1905. The original stock of birds, which comprised 5 obtained in 1894 and 12 in 1895, has increased, so that the commissioners of fisheries and game were able to distribute 232 pheasants in 1902 and 424 in 1903. Propagation is still being continued with good prospects of success.

LIMITATIONS ON INTRODUCTION OF FOREIGN GAME BIRDS.

Among the factors to be considered in an attempt to acclimatize foreign game birds are three of special importance, namely, habits of the birds, their cost, and their protection.

HABITS OF THE BIRDS.

A fundamental question, and one often lost sight of in introducing birds, is whether the species is resident or migratory. Birds which have been successfully introduced into new regions are, with scarcely an exception, those that do not migrate, while those with which failure has been common are migratory. The migratory instinct is so strong that when the proper season arrives the birds almost certainly leave the place of liberation, and they seldom return. The only way in which success may be attained in introducing migratory species is by reducing the birds to a state of domestication, keeping them in captivity, or possibly putting them on islands, like New Zealand, in mid-ocean, far removed from other land. Occasionally a migratory species becomes to a certain extent resident and lingers about a locality for several years, as in the case of the skylark on Long Island, but this is exceptional, and can not be depended on. These facts readily explain the success which has attended the introduction of pheasants, which are resident, and the failures with the European quail, which are migratory.

Thousands of European quail have been liberated in the United States during the last thirty or forty years, but nowhere has the species gained a foothold. Most of the birds turned out in Massachusetts and Vermont in June, 1877, to which reference has already been made, disappeared after a few months. During the following autumn European quail were seen and killed at various points along the South Atlantic coast; thirty or forty were reported to have flown on board a vessel off Cape Hatteras, several were shot in Carteret County, on the coast of North Carolina, and one was shot and at least three bevies were seen near Savannah, Ga.[a]

Of the game birds which are commonly introduced, waterfowl, plover, and Old World quail are nearly all migratory, and except

[a] Forest and Stream, Vol. XIII, pp. 307, 397, 1877.

under peculiar conditions, can be successfully kept only in captivity. In New Zealand green plover, golden plover, and several species of ducks and geese have been introduced. The experiments with plover failed, but those with certain ducks and geese have been comparatively successful.

Even in the case of resident species the habits of introduced birds must be carefully considered, particularly in regard to food supply and cover. In the case of pheasants, food and cover are especially important, as shown by two recent experiments in California. In one case the birds were liberated in the great interior valley, where grain and other food were abundant but cover was lacking. In the other case they were turned out on a large preserve near the coast, where there was abundant cover but little grain. In both instances the birds failed to increase and the experiments practically failed.

COST OF BIRDS.

Although some pheasants can now be had at reasonable prices, the cost of the rarer birds is still almost prohibitory if any considerable number are desired. Prices of pheasants vary not only according to species, but also according to season, being lowest in the early autumn and highest in March and April. The average price per pair of some of the commoner species is as follows: English and Mongolian pheasants, $5 to $10; silver pheasants, $15 to $25; golden, $18 to $25; Reeves, $20 to $30; Amherst, $20 to $35; Swinhoe, $25 to $40, and Elliot, $30 to $50. Of the ducks most frequently imported, the price of wood ducks and mandarins ranges from $15 to $25 per pair.

Considering the comparative ease with which some of these birds, such as golden pheasants, wood ducks, and mandarin ducks can be propagated, these prices seem unnecessarily high and, as shown by the small number of birds in many importations, are almost prohibitive. Golden pheasants are often imported singly, in pairs, or in trios, and, consequently, experiments frequently fail by the loss of one or two birds, whereas, if a dozen or more were imported, as in the case of English or ring-necked pheasants, the chances for success would be much greater. Judging by the demand for these birds, which seems to be on the increase, it would appear that lower prices would increase sales to such an extent as not to affect profits to any appreciable degree.

PROTECTION.

Before foreign game birds can be successfully acclimated, they must be given protection long enough to enable them to gain a foothold amid their new surroundings. If they belong to groups other than those of our native birds, and consequently are not covered by such

general terms as grouse, quail, or duck, they usually require special statutes for their protection. To liberate conspicuous birds like Mongolian or English pheasants in States where they are not protected is simply to invite failure of the experiment, as they are almost certain to be killed within a short time. In 1895 the legislature of New Hampshire made an appropriation of $500 for the introduction of foreign game birds, but neglected to enact a law protecting them. Under these circumstances the fish and game commission of the State wisely decided not to expend the money until a protective law was enacted rather than to undertake the introduction of birds which must almost certainly be killed after liberation.

Protective legislation relating to imported birds has always been fragmentary and more or less unsatisfactory. The old colonial method of according protection for a few years has been very generally followed, with the result that the statutes require constant reenactment and at every change involve the danger that protection may be withdrawn and work already accomplished lost through a premature open season. Thus, the Texas statutes of 1897 protected pheasants for a period of five years expiring in 1902. There being no session of the legislature in that year the law could not be renewed until 1903, thus leaving a gap of a year in which the birds might be killed with impunity, and the benefits of previous experiments nullified. That the results were not serious is due to the fact that comparatively few birds had been liberated and the expiration of the term of protection was probably not generally known.

It is customary to provide complete protection for imported birds during periods of three, five, or, rarely, ten years. Within the next three years laws protecting pheasants and other imported birds will expire in New Hampshire, Massachusetts, Rhode Island, Connecticut, South Carolina, Georgia, Wisconsin, North Dakota, Kansas, New Mexico, Wyoming, Idaho, Nevada, Washington, and Ontario—in fact, in about one-half of the States and Provinces that accord this kind of protection. In seven States ring-necked pheasants are placed on the same footing as other game, and a short season is allowed for hunting. These States are Vermont, Pennsylvania, New Jersey, Maryland, Tennessee, Missouri, and Oregon (west of the Cascades). The States which have these special laws and the date of expiration of the statute in each case are shown in the following table and also on the accompanying map (fig. 1).

Table showing protection of imported birds.

State.	Birds protected.	End of term.
Arkansas	Pheasants (English, Chinese)	1913
California	Pheasants (English, Mongolian), English partridge, Chinese quail	(a)
Colorado	Pheasants, partridge	(a)
Connecticut	Pheasants (Chinese, Mongolian)	1906
Georgia	Pheasants	1905
Hawaii	All imported birds	1907
Idaho	Pheasants (Mongolian)	1907
Illinois	Pheasants (English, golden, green Japanese, Mongolian or ring-necked, silver, Sœmmerring, tragopan), chukar partridge.	1913
Indiana	Pheasants	(a)
Kansas	Pheasants (Chinese, Mongolian)	1907
Maine	Pheasants, black game, capercailzie	1911
Maryland	Pheasants (English, Mongolian) ..... December 25 to November 1	
Massachusetts	Pheasants (English, golden, Mongolian)	1905
Michigan	Pheasants (English, Mongolian)	1910
Minnesota	Pheasants (Chinese, English, Mongolian)	(a)
Missouri	Pheasants (Chinese) ..... January 1 to November 1	
Montana	Pheasants (Chinese)	(a)
Nebraska	Pheasants	(a)
Nevada	....do	1906
New Hampshire	....do	1905
New Jersey	Pheasants (English, ring-necked) ..... January 1 to November 10	
New Mexico	Pheasants	1906
New York	Pheasants (English, Mongolian or ring-necked)	1910
North Dakota	Pheasants (Chinese, English)	1905
Ohio	Pheasants	1908
Oregon	Pheasants (copper, golden, green Japanese, Reeves, silver—except east of Cascades) English partridge, capercailzie, moor hen.	1905
East of Cascades.	Pheasants	(a)
West of Cascades	Pheasants (China torquatus or ring-necked) Clatsop, Coos, Curry, Jackson, Josephine counties.	1906
	Douglas County ..... December 1 to September 1 (?)	
	Tillamook County ..... December 1 to September 15	
	Remaining counties ..... December 1 to October 1	
Pennsylvania	Pheasants ..... December 16 to October 15	
Rhode Island	Pheasants	1905
South Carolina	Pheasants (Mongolian or ring-necked)	1905
Tennessee	Pheasants (English, ring-necked) ..... January 1 to December 1	
Texas	Pheasants (English, Mongolian)	1908
Utah	Any introduced game	(a)
Vermont	Pheasants, English partridge ..... November 20 to October 1	
Virginia	Pheasants (English, Mongolian)	1909
Washington (east)	Pheasants (copper, golden, Mongolian or ring-necked. silver)	1908
Washington (west)	Pheasants (copper, golden, Mongolian or ring-necked, silver), Chinese quail.	1906
Wisconsin	Pheasants (Chinese, English, Mongolian)	1905
Wyoming	Pheasants (Mongolian)	1906
British Columbia	Pheasants, English partridges	(a)
New Brunswick	Pheasants	(a)
Northwest Territories.	Pheasants (English)	(a)
Nova Scotia	Pheasants, chukar partridges, blackcock, capercailzie	(a)
Ontario	Pheasants (English, Mongolian)	1905

a Term unlimited.

This table brings out clearly two important facts: (1) That only seven States have laws which do not require constant renewal, and (2) that less than a dozen States protect anything more than English and Mongolian pheasants, and less than half a dozen any foreign birds other than pheasants. The Canadian laws offer a strong contrast in that only one Province out of five has a definite date of expiration; but they are also limited to a few species, mainly pheasants. To fully accomplish their purpose such laws should be modeled somewhat after that now in force in Utah, and should prohibit the capture, sale, or possession, except for purposes of propagation, of any game animals or birds introduced into the State. When any species becomes sufficiently abundant, a short open season can be provided without

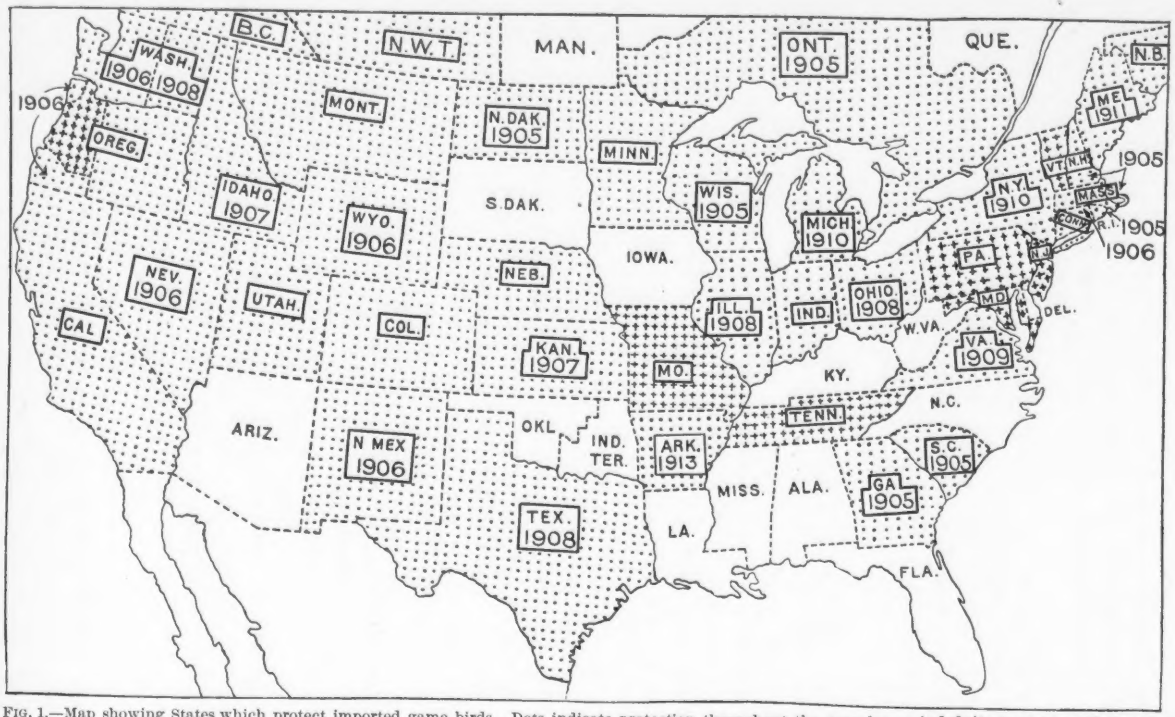

FIG. 1.—Map showing States which protect imported game birds. Dots indicate protection throughout the year for an indefinite term or until the date given; crosses indicate protection for most of the year, with a short open season; States without special laws are blank.

repealing the original law and without interfering with the protection it accords to other species. The uncertainty attending the reenactment of laws which expire after a few years, and the necessity of securing special legislation for species not already covered under existing law are thus entirely obviated.

SUMMARY.

(1) Since the passage of the Lacey Act the game birds imported into the United States, as shown by the record of permits, numbered 23,178, and comprised 3,866 pheasants, 16,609 quail, 753 partridges, 1,473 ducks and geese, and 477 miscellaneous birds.

(2) Pheasants come chiefly from Canada and Belgium, quail from China, partridges from Germany, and ducks and geese from Belgium and Germany. England furnishes pheasants and a few partridges; China and Japan some pheasants and waterfowl.

(3) The pheasants were chiefly English and Mongolian, or ring-necked, imported for game preserves, and fifteen to twenty other species brought in for aviaries. The partridges were nearly all the gray partridge of Europe. Quail comprised two-thirds of all the foreign game birds brought in alive; nearly all of these were Chinese quail shipped from Hongkong to San Francisco for restaurant purposes. Among the ducks and geese brought in were mandarin and wood ducks, and among the miscellaneous birds about 230 swans and 65 capercailzie.

(4) Since the passage of the Egg Act, in June, 1902, six importations, aggregating over 2,000 eggs, have been brought into the United States. All the eggs were those of pheasants, except one shipment of 100 partridge eggs. The results of the experiments during the unfavorable season of 1903 should not be regarded as a fair test of this method of introducing game birds, which has been successful elsewhere.

(5) Foreign game birds have been successfully introduced in various parts of the world. The most successful experiments have been those with pheasants, introduced into England at an early date and into the island of St. Helena in 1513. Among other notable examples of acclimatization may be mentioned those of the ring-necked pheasant in Oregon, the red-legged partridge in England, and the reintroduction of the capercailzie in Scotland.

(6) Game birds have been introduced under State auspices in nine States, and at least one Province of Canada. Experiments in propagation have also been made by several of these States, notably Massachusetts, New Jersey, New York, and Ohio. Between 1900 and 1902 Ohio appropriated $9,000 for this work and distributed 3,919 eggs and 6,575 pheasants. Since 1902 the experiment has been discontinued

owing to the failure of the appropriation. Between 1900 and 1904 New York distributed 1,064 pheasants, but recently abandoned the work because of lack of an appropriation. Massachusetts is still propagating pheasants and distributing several hundred each year.

(7) Three important factors—migratory habits, cost, and inadequate protection—tend to restrict successful acclimatization of game birds. Little, if any, success has resulted from the introduction of migratory species and even in the case of resident birds preference for certain kinds of food or cover enter largely into the question of success. Present prices of pheasants (except English and Mongolian) and of certain kinds of waterfowl are so high that they practically prevent the importation of these birds in large numbers. Most foreign birds require special protective legislation, but many of the laws thus far enacted are unsatisfactory. Such statutes should be broad enough to cover all imported species and should be so framed that when necessary an open season for one species may be provided without repealing or radically changing the original law.

The introduction of pheasants has progressed so far that prospects for success in a given locality can be predicted with some degree of certainty, but the introduction of other birds is still in an experimental stage. In the future, as in the past, importation of game birds will probably depend largely on private enterprise, but with greater cooperation, and especially with more attention paid to the requirements of food and protection much better results may be attained.

NOTES REGARDING DEPARTMENT PUBLICATIONS.

The publications of the U. S. Department of Agriculture are mainly of three general classes:

I. Publications issued annually, comprising the Yearbooks, the Annual Reports of the Department, of the Bureau of Animal Industry, of the Bureau of Soils, and of the Weather Bureau.

II. Other departmental reports, divisional bulletins, etc. Of these, each bureau, division, and office has its separate series in which the publications are numbered consecutively as issued. They comprise reports and discussions of a scientific or technical character.

III. Farmer's bulletins, divisional circulars, reprinted Yearbook articles, and other popular papers.

The publications in Class I are distributed by the Department and by Senators and Representatives in Congress. For instance, of the 500,000 copies of the Yearbook usually issued, the Department is allotted only 30,000, while the remaining 470,000 copies are distributed by members of Congress. The Department's supply of the publications of this class is, therefore, limited, and consequently has to be reserved almost exclusively for distribution to its own special correspondents, and in return for services rendered.

The publications of Class II are not for distribution by members of Congress, and they are not issued in editions large enough to warrant free general distribution by the Department. The supply is used mainly for distribution to those who cooperate with the Department or render it some service, and to educational and other public institutions. A sample copy of this class of publications can usually be sent on application, but, aside from this, the Department generally finds it necessary to refer applicants to the Superintendent of Documents, of whom further mention is made below.

The publications of Class III treat in a practical way of subjects of particular interest to farmers. They are usually issued in large editions, and are for free general distribution by the Department. The farmers' bulletins are also for distribution by Senators and Representatives in Congress, to each of whom is furnished annually, according to law, a quota of several thousand copies for distribution amomg his constituents.

A limited supply of nearly all the publications in Classes I and II is, in compliance with the law, placed in the hands of the Superintendent of Documents for sale at cost of printing. Application for these should be addressed to the **Superintendent of Documents, Government Printing Office, Washington, D. C.,** and should be accompanied by postal money order, payable to him for the amount of the price. No postage stamps or private checks should be sent. The Superintendent of Documents is not permitted to sell more than **one copy** of any public document to the same person. Under a recent resolution he may reprint any publication for which the demand is sufficient to justify it, provided the head of the Department which originally published the book shall approve. The Public Printer may sell to one person any number not to exceed 250 copies if ordered before the publication goes to press.

The Secretary of Agriculture has no voice in designating the public libraries which shall be the depositories of public documents. Of the distribution of documents to such depositories, including the publications of this and all other Departments of the Government, the Superintendent of Documents has full charge.

For publications of the Weather Bureau, requests and remittances should be directed to the Chief of the Weather Bureau.

The Department has no list of persons to whom all publications are sent. The monthly list, issued on the first day of each month, will be mailed regularly to all who apply for it. The Department also issues and sends out to all who apply for them a complete list of all publications of which the Department has a supply for free distribution, and a similar list of all the Department's publications for sale by the Superintendent of Documents.

FARMERS' BULLETINS.

The following is a list of the Farmers' Bulletins available for distribution, showing the number, title, and size in pages of each. Copies will be sent to any address on application to any Senator, Representative, or Delegate in Congress, or to the Secretary of Agriculture, Washington, D. C. The missing numbers have been discontinued, being superseded by later bulletins.

16. Leguminous Plants. Pp. 24.
22. Feeding of Farm Animals. Pp. 32.
24. Hog Cholera and Swine Plague. Pp. 16.
25. Peanuts: Culture and Uses. Pp. 24.
27. Flax for Seed and Fiber. Pp. 16.
28. Weeds: And How to Kill Them. Pp. 32.
29. Souring and Other Changes in Milk. Pp. 23.
30. Grape Diseases on the Pacific Coast. Pp. 15.
31. Alfalfa, or Lucern. Pp. 24.
32. Silos and Silage. Pp. 32.
33. Peach Growing for Market. Pp. 24.
34. Meats: Composition and Cooking. Pp. 29.
35. Potato Culture. Pp. 24.
36. Cotton Seed and Its Products. Pp. 16.
37. Kafir Corn: Culture and Uses. Pp. 12.
38. Spraying for Fruit Diseases. Pp. 12.
39. Onion Culture. Pp. 31.
42. Facts About Milk. Pp. 29.
43. Sewage Disposal on the Farm. Pp. 20.
44. Commercial Fertilizers. Pp. 24.
45. Insects Injurious to Stored Grain. Pp. 24.
46. Irrigation in the Humid Climates. Pp. 27.
47. Insects Affecting the Cotton Plant. Pp. 32.
48. The Manuring of Cotton. Pp. 16.
49. Sheep Feeding. Pp. 24.
50. Sorghum as a Forage Crop. Pp. 20.
51. Standard Varieties of Chickens. Pp. 48.
52. The Sugar Beet. Pp. 48.
53. How to Grow Mushrooms. Pp. 20.
54. Some Common Birds. Pp. 40.
55. The Dairy Herd. Pp. 24.
56. Experiment Station Work—I. Pp. 31.
57. Butter Making on the Farm. Pp. 16.
58. The Soy Bean as a Forage Crop. Pp. 24.
59. Bee Keeping. Pp. 32.
60. Methods of Curing Tobacco. Pp. 16.
61. Asparagus Culture. Pp. 40.
62. Marketing Farm Produce. Pp. 28.
63. Care of Milk on the Farm. Pp. 40.
64. Ducks and Geese. Pp. 48.
65. Experiment Station Work—II. Pp. 32.
66. Meadows and Pastures. Pp. 28.
68. The Black Rot of the Cabbage. Pp. 22.
69. Experiment Station Work—III. Pp. 32.
70. Insect Enemies of the Grape. Pp. 23.
71. Essentials in Beef Production. Pp. 24.
72. Cattle Ranges of the Southwest. Pp. 32.
73. Experiment Station Work—IV. Pp. 32.
74. Milk as Food. Pp. 39.
75. The Grain Smuts. Pp. 20.
76. Tomato Growing. Pp. 30.
77. The Liming of Soils. Pp. 19.
78. Experiment Station Work—V. Pp. 32.
79. Experiment Station Work—VI. Pp. 28.
80. The Peach Twig-borer. Pp. 16.
81. Corn Culture in the South. Pp. 24.
82. The Culture of Tobacco. Pp. 24.

83. Tobacco Soils. Pp. 23.
84. Experiment Station Work—VII. Pp. 32.
85. Fish as Food. Pp. 30.
86. Thirty Poisonous Plants. Pp. 32.
87. Experiment Station Work—VIII. Pp. 32.
88. Alkali Lands. Pp. 23.
89. Cowpeas. Pp. 16.
91. Potato Diseases and Treatment. Pp. 12.
92. Experiment Station Work—IX. Pp. 30.
93. Sugar as Food. Pp. 27.
94. The Vegetable Garden. Pp. 24.
95. Good Roads for Farmers. Pp. 47.
96. Raising Sheep for Mutton. Pp. 48.
97. Experiment Station Work—X. Pp. 32.
98. Suggestions to Southern Farmers. Pp. 48.
99. Insect Enemies of Shade Trees. Pp. 30.
100. Hog Raising in the South. Pp. 40.
101. Millets. Pp. 28.
102. Southern Forage Plants. Pp. 48.
103. Experment Station Work—XI. Pp. 32.
104. Notes on Frost. Pp. 24.
105. Experiment Station Work—XII. Pp. 32.
106. Breeds of Dairy Cattle. Pp. 48.
107. Experiment Station Work—XIII. Pp. 32.
108. Saltbushes. Pp. 20.
109. Farmers' Reading Courses. Pp. 20.
110. Rice Culture in the United States. Pp. 28.
111. Farmers' Interest in Good Seed. Pp. 24.
112. Bread and Bread Making. Pp. 39.
113. The Apple and How to Grow it. Pp. 32.
114. Experiment Station Work—XIV. Pp. 28.
115. Hop Culture in California. Pp. 27.
116. Irrigation in Fruit Growing. Pp. 48.
117. Sheep, Hogs, and Horses in the Northwest. Pp. 28.
118. Grape Growing in the South. Pp. 32.
119. Experiment Station Work—XV. Pp. 31.
120. Insects Affecting Tobacco. Pp. 32.
121. Beans, Peas, and other Legumes as Food. Pp. 32.
122. Experiment Station Work—XVI. Pp. 32.
123. Red Clover Seed: Information for Purchasers. Pp. 11.
124. Experiment Station Work—XVII. Pp. 32.
125. Protection of Food Products from Injurious Temperatures. Pp. 26.
126. Practical Suggestions for Farm Buildings. Pp. 48.
127. Important Insecticides. Pp. 42.
128. Eggs and Their Uses as Food. Pp. 32.
129. Sweet Potatoes. Pp. 40.
131. Household Tests for Detection of Oleomargarine and Renovated Butter. Pp. 11.
132. Insect Enemies of Growing Wheat. Pp. 40.
133. Experiment Station Work—XVIII. Pp. 32.
134. Tree Planting in Rural School Grounds. Pp. 38.
135. Sorghum Sirup Manufacture. Pp. 40.

136. Earth Roads. Pp. 24.
137. The Angora Goat. Pp. 48.
138. Irrigation in Field and Garden. Pp. 40.
139. Emmer: A Grain for the Semiarid Regions. Pp. 16.
140. Pineapple Growing. Pp. 48.
141. Poultry Raising on the Farm. Pp. 16.
142. The Nutritive and Economic Value of Food. Pp. 48.
143. The Conformation of Beef and Dairy Cattle. Pp. 44.
144. Experiment Station Work—XIX. Pp. 32.
145. Carbon Bisulphid as an Insecticide. Pp. 28.
146. Insecticides and Fungicides. Pp. 16.
147. Winter Forage Crops for the South. Pp. 36.
148. Celery Culture. Pp. 32.
149. Experiment Station Work—XX. Pp. 32.
150. Clearing New Land. Pp. 24.
151. Dairying in the South. Pp. 48.
152. Scabies in Cattle. Pp. 24.
153. Orchard Enemies in the Pacific Northwest. Pp. 39.
154. The Fruit Garden: Preparation and Care. Pp. 20.
155. How Insects Affect Health in Rural Districts. Pp. 20.
156. The Home Vineyard. Pp. 24.
157. The Propagation of Plants. Pp. 24.
158. How to Build Small Irrigation Ditches. Pp. 28.
159. Scab in Sheep. Pp. 48.
161. Practical Suggestions for Fruit Growers. Pp. 28.
162. Experiment Station Work—XXI. Pp. 32.
164. Rape as a Forage Crop. Pp. 16.

197

165. Culture of the Silkworm. Pp. 32.
166. Cheese Making on the Farm. Pp. 16.
167. Cassava. Pp. 32.
168. Pearl Millet. Pp. 16.
169. Experiment Station Work—XXII. Pp. 32.
170. Principles of Horse Feeding. Pp. 44.
171. The Control of the Codling Moth. Pp. 24.
172. Scale Insects and Mites on Citrus Trees. Pp. 43.
173. Primer of Forestry. Pp. 48.
174. Broom Corn. Pp. 32.
175. Home Manufacture and Use of Unfermented Grape Juice. Pp. 16.
176. Cranberry Culture. Pp. 20.
177. Squab Raising. Pp. 32.
178. Insects Injurious in Cranberry Culture. Pp. 32.
179. Horseshoeing. Pp. 31.
180. Game Laws for 1903. Pp. 56.
181. Pruning. Pp. 39.
182. Poultry as Food. Pp. 40.
183. Meat on the Farm—Butchering, curing, etc.
184. Marketing Live Stock. Pp. 40.
185. Beautifying the Home Grounds.
186. Experiment Station Work—XXIII. Pp. 32.
187. Drainage of Farm Lands.
188. Weeds Used in Medicine.
189. Information Concerning the Mexican Cotton-Boll Weevil.
190. Experiment Station Work—XXIV.—32
191. The Cotton Bollworm. Pp. 24.
192. Barnyard Manure. Pp. 32.
193. Experiment Station Work—XXV. Pp. 32.
194. Alfalfa Seed. Pp. 14.
195. Annual Flowering Plants. Pp. 48.

O